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Implementing SEA within Spatial Planning to Ensure Sustainable Geothermal Energy Development in Indonesia

Implementing SEA within Spatial Planning to Ensure Sustainable Geothermal Energy Development in Indonesia

Pre-workshop ITB

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Outline

1. Understanding Strategic Environmental Assessment (SEA)
 - a. What is SEA?
 - b. Why Indonesia needs SEA?
 - c. Who should conduct the SEA?
2. SEA is mandatory in Indonesia
 - a. By Law, SEA is mandatory
 - b. When or in what situation the SEA should be implemented
3. SEA implementation in Indonesia
 - a. How to implement SEA for GTE plant allocation policy (phases)
 - b. A brief SEA exercise

What is the different between SEA and EIA

What is SEA for?

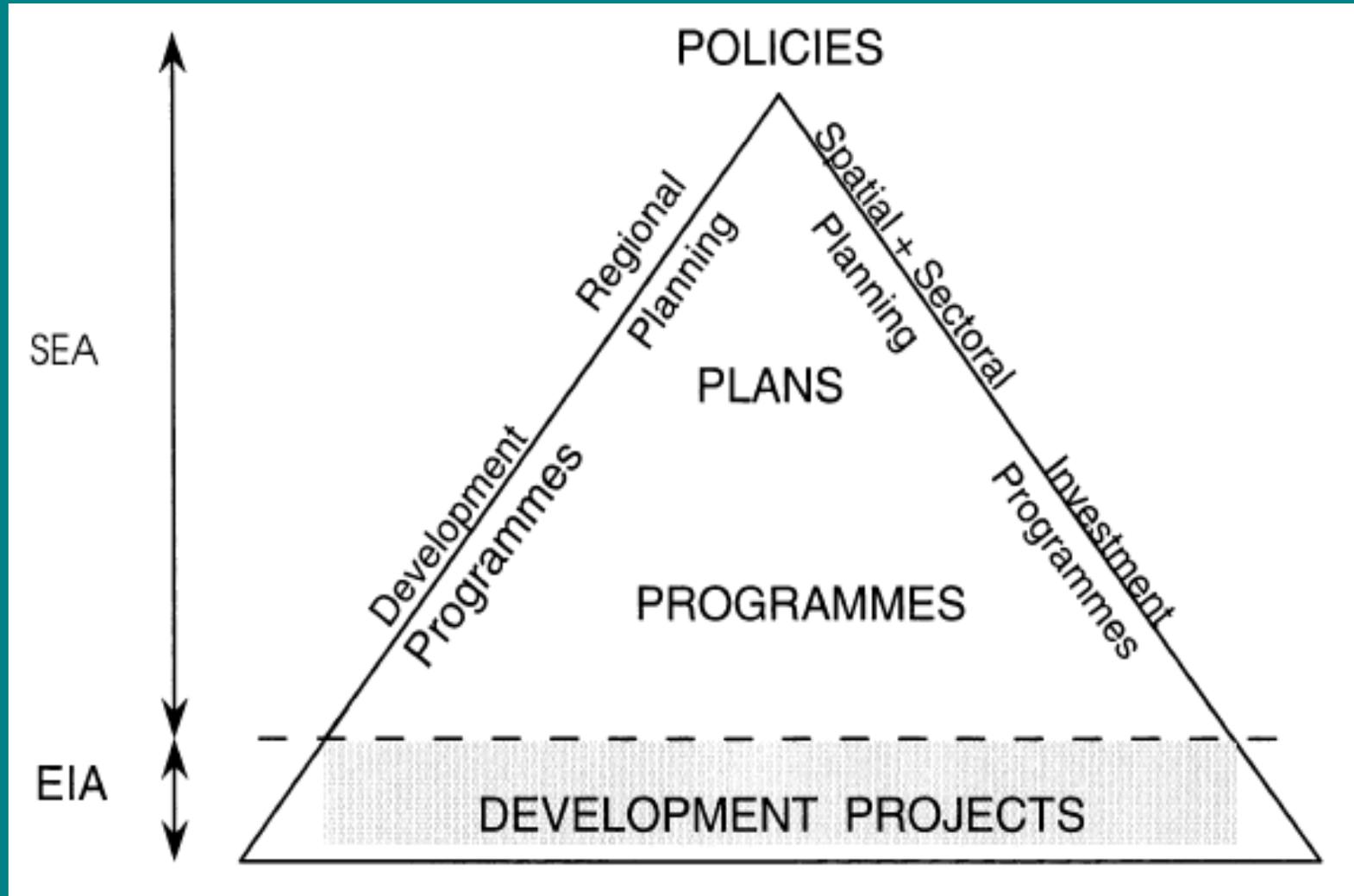
- Integrate environmental and sustainability issues into strategic options
- Help find ways for sustainability

SEA = GOOD STRATEGY

EIA = GOOD DESIGN



SEA and Policy-Plan-Program (PPP)



Source: Partidario, 2000



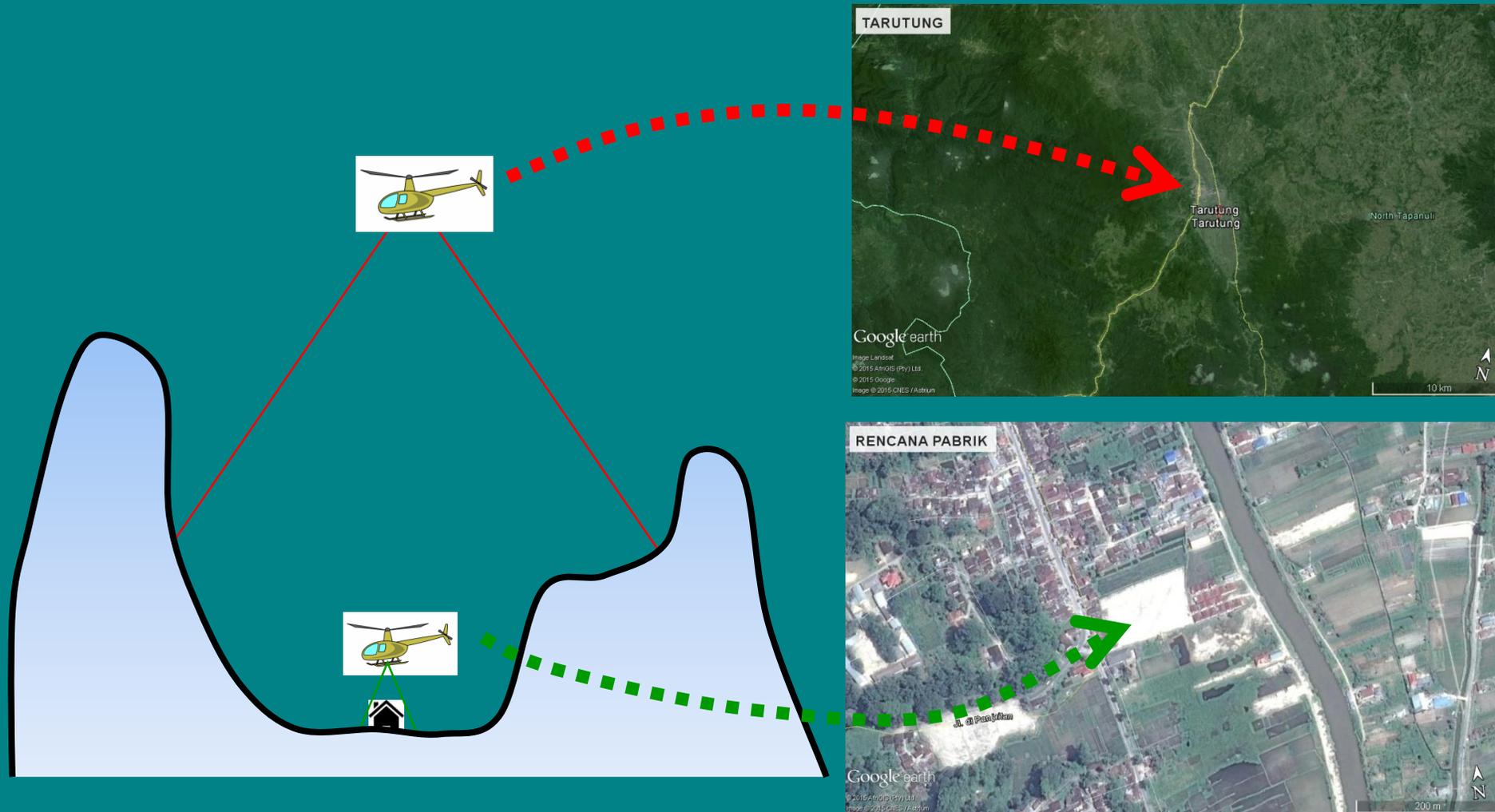
SEA is a strategic facilitator of sustainability process

Seven underlying principles of a strategic-based approach to SEA

1. Understand the strategy that is the object of SEA and the assessment context
2. Ensure a long-term horizon and a holistic, cross-sectoral and integrated perspective
3. Focus solely on critical factors for decision-making (preferentially between 3 and 8) and work with trends (processes) rather than current situations
4. Adopt an attitude that facilitates decision-making, supporting the decision-maker and encouraging sustainable decisions
5. Regularly inform decision-making in a strategic and pragmatic manner (in the critical decision-making windows), with the purpose of assisting decision-making
6. Use communication strategies, consider multiple perspectives and act through good governance
7. Ensure the tracking of decisions taken (monitoring and systematic review of objectives)

- The SEA methodology adopts a strategic approach based on a long-term, holistic and cross-sectoral perspective that is highly focused on few, though significant, factors of analysis that are strategic for decision-making
- The scope of SEA includes physical, ecological, social, cultural and economic aspects, to the extent that they are relevant in determining the quality of the context in which we live and the risks and opportunities for sustainable development. (Sadler, 2007)

SEA: Enable to understand wider and more complex situation (more strategical than practical)



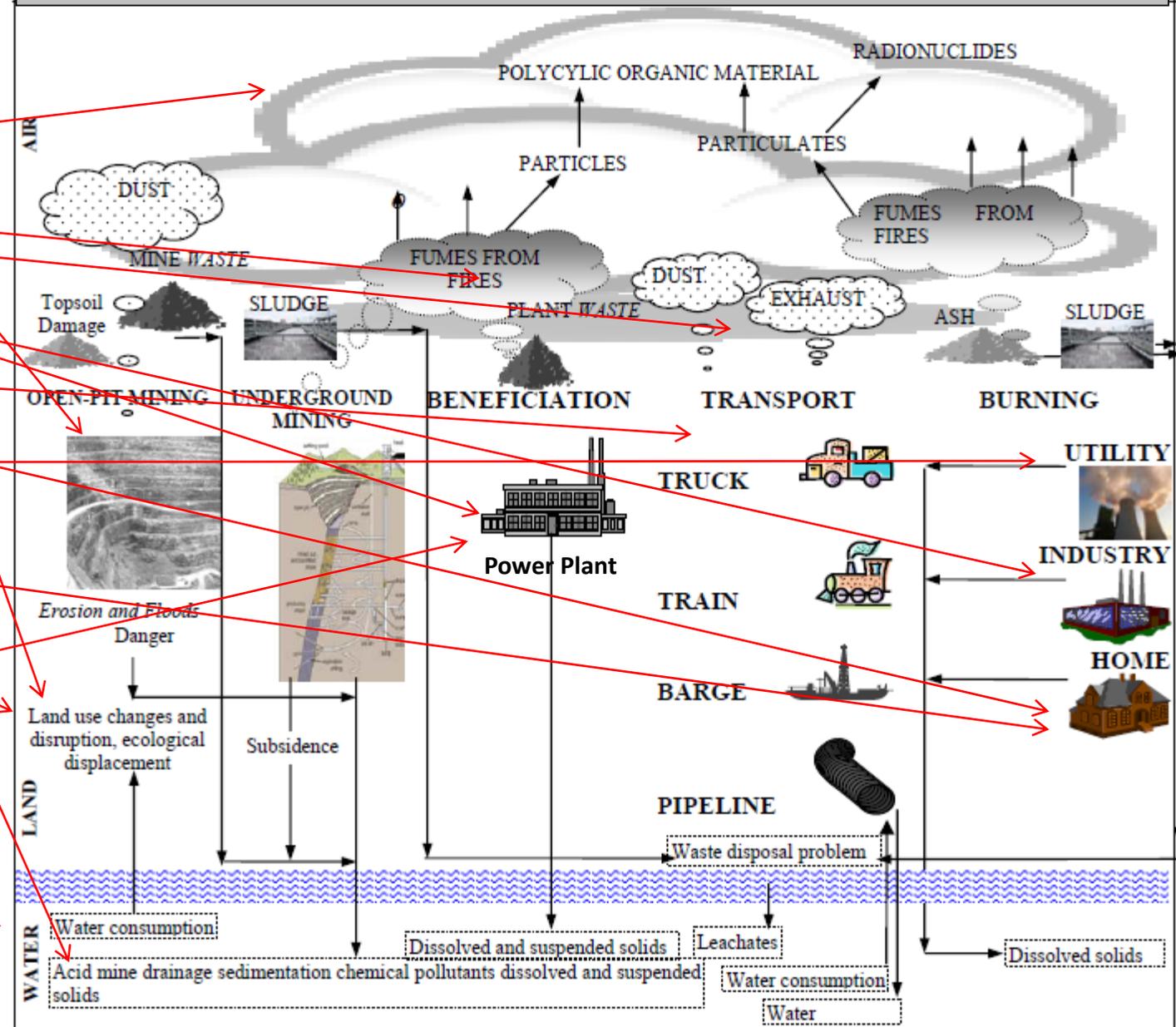
(Coal) Mining Activities and its inter-relation with other development sectors → an example of Stakeholder Mapping*)

Other parties,, instead of government institutions (Development Doers and Beneficiaries) such as:

Local Society (may represented by Local Leader)

NGOs

Private Sectors/ State-owned Company



Other government institutions (by sector line), instead of Ministry of Energy and Mineral Resources (National and Local Development Policy Makers):

Board for Meteorology
Climatology Geophysics

Forestry and Environmental

Industry

Transportation

Public Works & Housing

Rural Development

Spatial Planning and Land Use

Local
Government

The Differentiation between SEA and EIA

<i>In strategic model for SEA:</i>	<i>In traditional EIA terminology:</i>
Critical decision factors	Scoping
Decision windows (in strategic process)	Planning phases
Trend analysis, Drivers of change, Context	Baseline
Strategic Options	Alternatives
Opportunities and risks	Impacts
Guidelines (planning, management)	Mitigation measures

Why Indonesia Need SEA?

- Resource depletion and environmental degradation remain occur
- Increasing Intensive development and multiplier development Impacts consequences; tend to uncontrolled and greater development risk
- Remaining low institution capabilities and un-easy to have strong stakeholders (actors) engagement in handling sustainable development issues
- SEA is mandatory for any development plan and spatial plan policies



KLHS/SEA definition by Law (Law no. 32/2009)

Kajian Lingkungan Hidup Strategis (KLHS) adalah serangkaian analisis yang sistematis, menyeluruh, dan partisipatif untuk memastikan bahwa prinsip pembangunan berkelanjutan telah menjadi dasar dan terintegrasi dalam pembangunan suatu wilayah dan/atau kebijakan, rencana, dan/atau program.

(Pasal 1, UU 32/2009)

KETERKAITAN
(internal, vertical, horizontal)

KESEIMBANGAN
(ekonomi-sosbud-lingkungan)

KEADILAN
(antar pokmas & generasi)

ILMIAH
(teknokratik)

HOLISTIK
(sistemik)

Melibatkan Stakeholder

SEA is Mandatory by Law



Pemerintah dan pemerintah daerah **wajib** membuat KLHS dalam penyusunan atau evaluasi:

- Rencana tata ruang wilayah (RTRW) beserta rencana rincinya, **rencana pembangunan jangka panjang (RPJP)**, dan **rencana pembangunan jangka menengah (RPJM)** nasional, provinsi, dan/atau kabupaten/kota; dan
- **Kebijakan, rencana, dan/atau program** yang berpotensi menimbulkan **dampak** dan/atau **risiko** lingkungan

Law no, 32/2009 on Environmental Protection and Management

article 15 (1) and (2)



SEA Implementation by Law

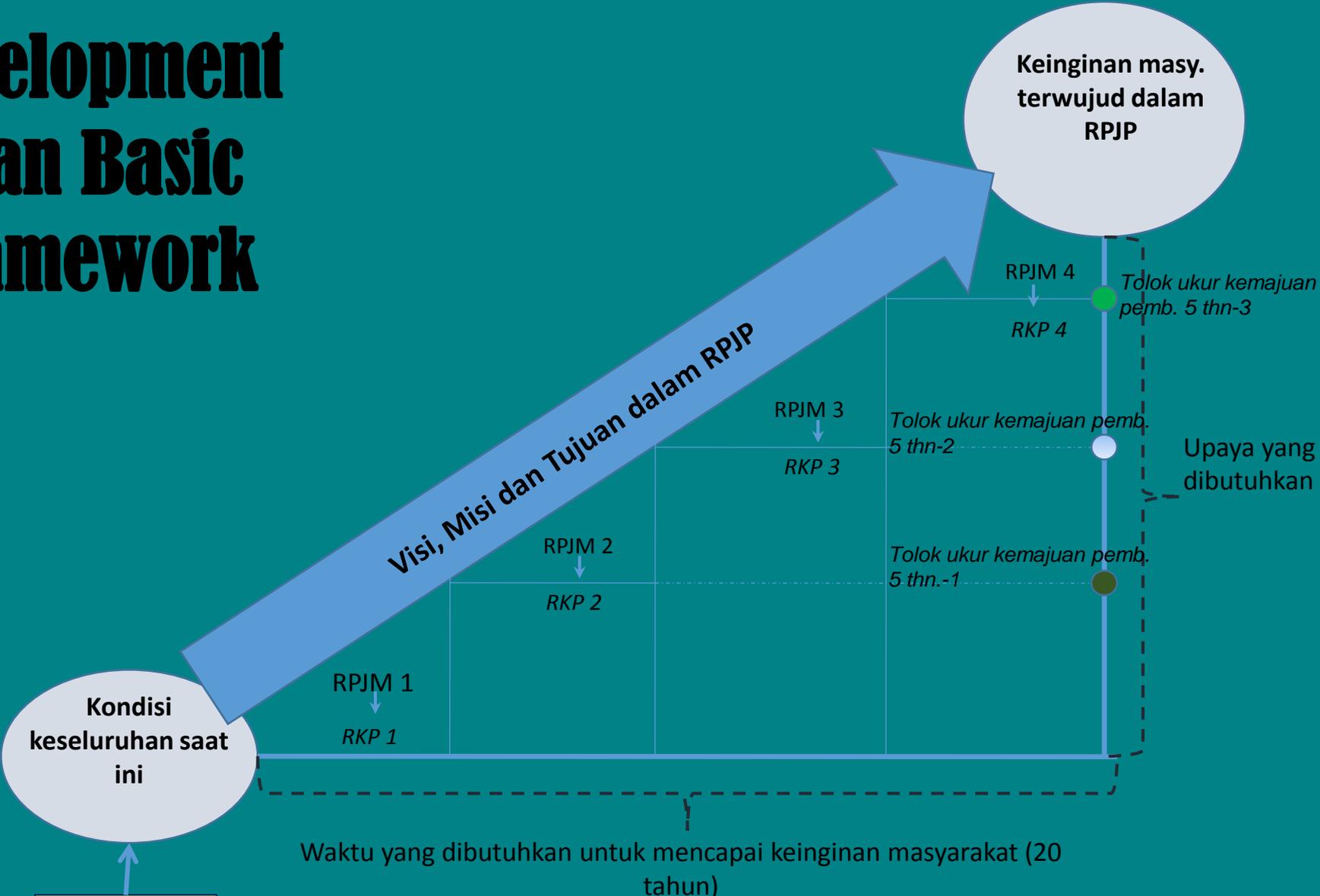


What are cross cutting issues being assessed in SEA?

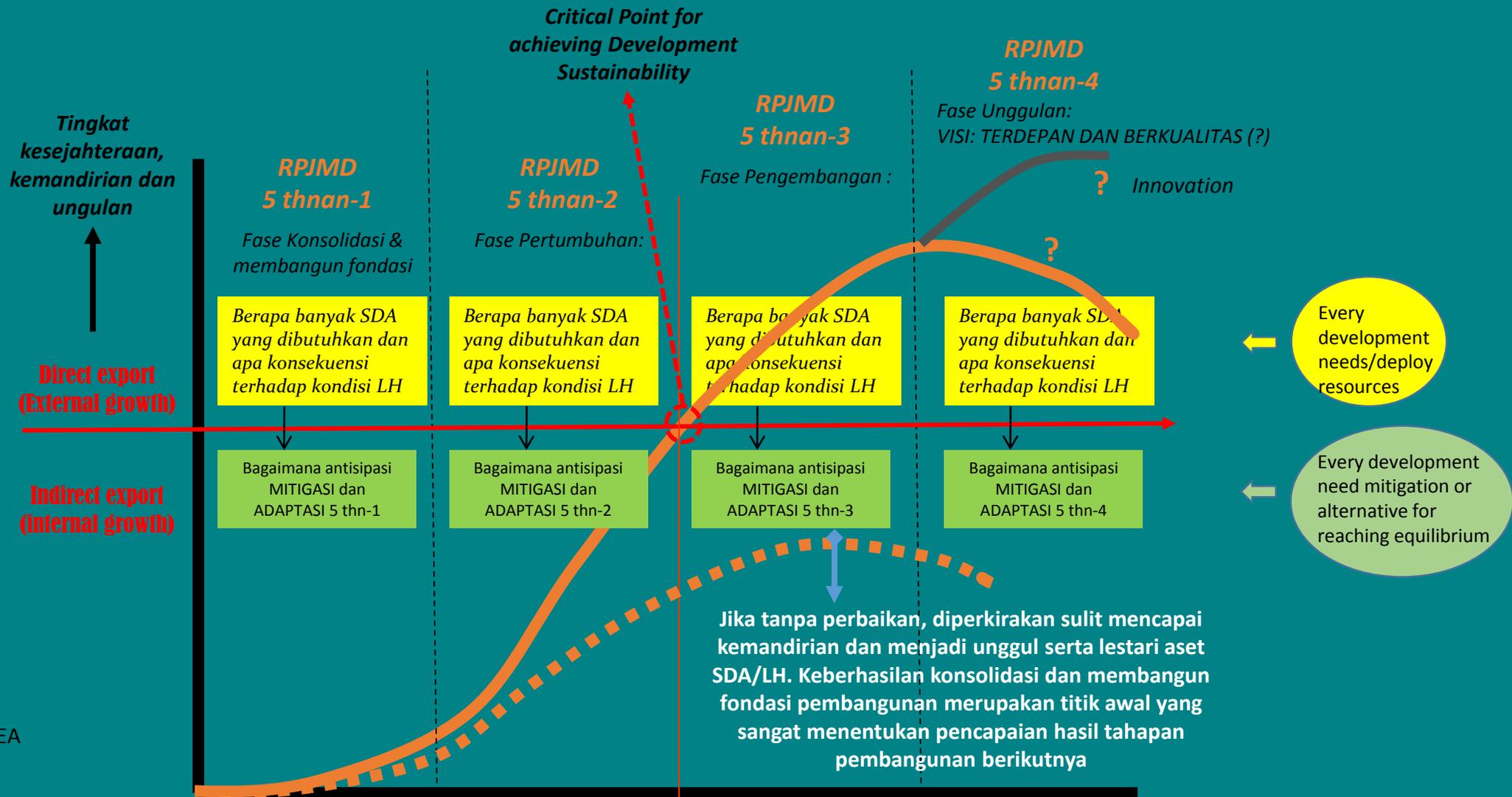
Pasal 16 UU No. 32/2009, muatan KLHS antara lain:

- kapasitas daya dukung & daya tampung lingkungan hidup untuk pembangunan (carrying capacity)
- **perkiraan mengenai dampak dan risiko lingkungan hidup;** (environmental impacts)
- kinerja layanan/jasa ekosistem; (payment for environmental services)
- efisiensi pemanfaatan sumber daya alam; (natural resources efficiency)
- tingkat kerentanan & kapasitas adaptasi thd perubahan iklim; (vulnerability and adaptive capacity towards climate change)
- tingkat ketahanan dan potensi keanekaragaman hayati (biodiversity resiliency)

Development Plan Basic Framework



Long Term Development Plan; With and Without SEA (an illustration)



Neraca Pembangunan Berkelanjutan berbasis SDA/LH masih negatif

Neraca Pembangunan Berkelanjutan (berbasis SDA/LH) positif

kapasitas pembangunan Berkelanjutan



Sustainable development

Unsustainable development



Sustainable road construction  includes locating roads further away from the coastline, constructing bridges to allow fish passage  and using plant buffers  to reduce erosion of sediment  into the water, resulting in smaller sediment plumes  when it rains and clearer water. Sustainable agriculture  will support local communities. Encouraging ecotourism developments  will also help prevent erosion and maintain water quality. These sustainable development principles will help protect livelihoods  traditional ways of life , and biodiversity .

Unsustainable road construction  includes locating roads too close to the coast, blocking fish passage up and down rivers , and cutting down all the trees and mangroves surrounding the road  which leads to a lot of sediment runoff  during rain events . Unsustainable mining practices include the operation of many strip mines with no plant buffers and no minesite rehabilitation . Unregulated tourism developments  will also increase erosion and harm water quality. Cutting down forests to plant palm oil plantations  is another major source of sediment runoff into the water. Too much sediment in the water smothers corals , kills seagrasses , and promotes growth of seaweeds and soft corals .

Unsustainable communities



Sustainable communities

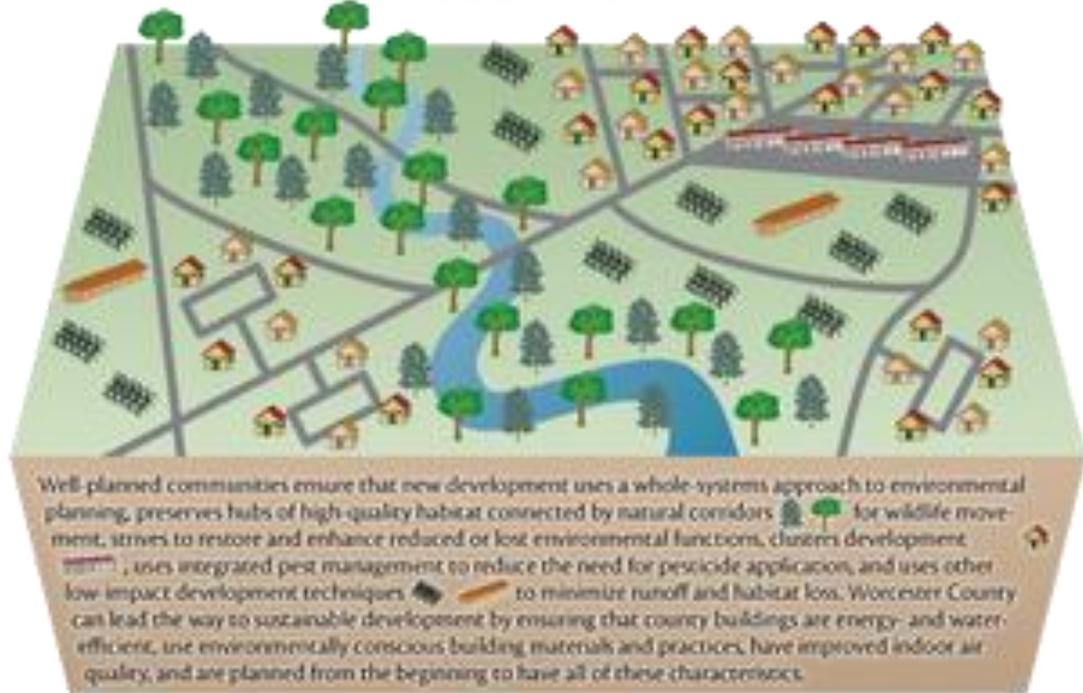
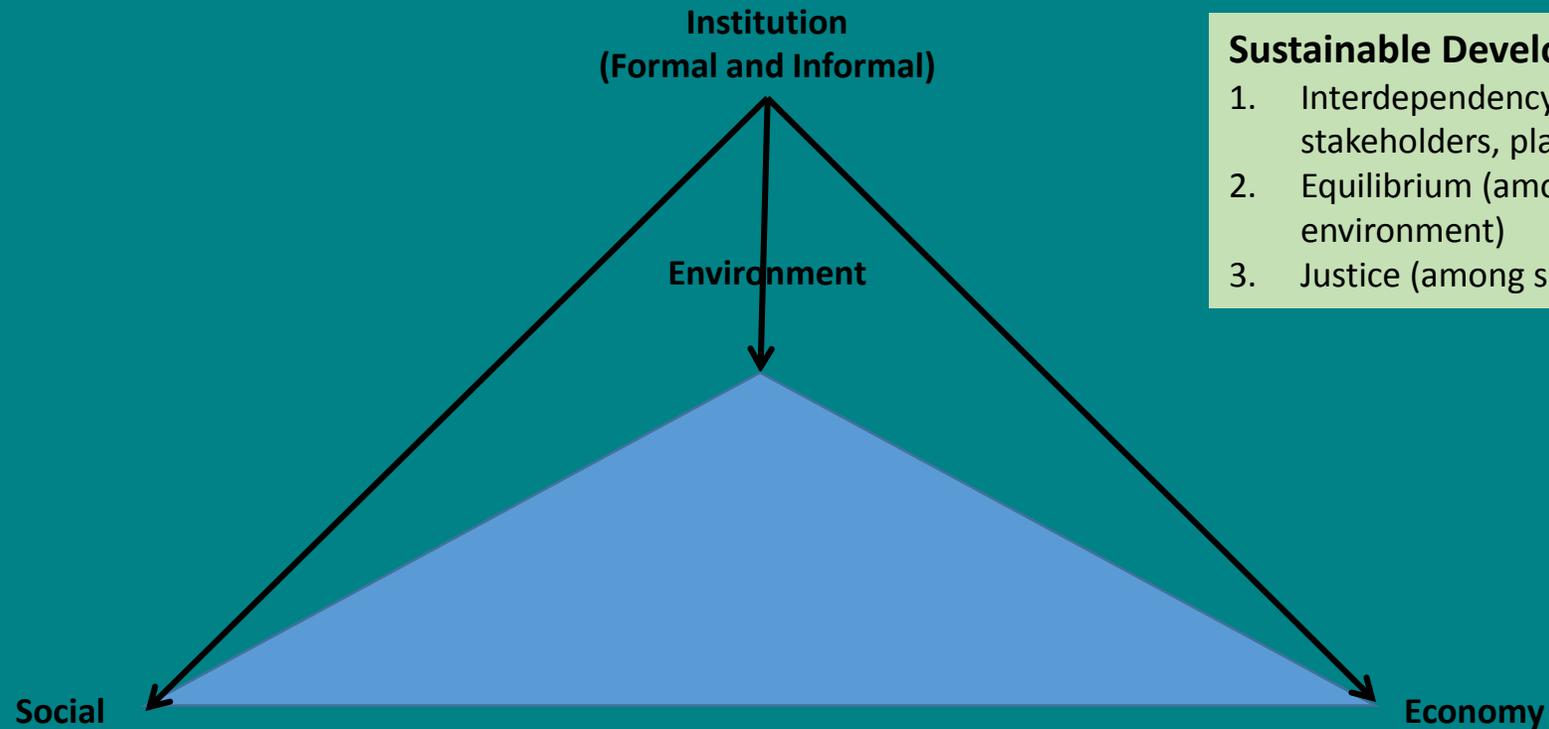


Diagram courtesy of the Integration and Application Network (ian.umces.edu), University of Maryland Center for Environmental Science. Source: Dennison, W.C., J.E. Thomas, C.J. Cain, T.J.B. Carruthers, M.R. Hall, R.V. Jeslan, C.E. Wazniak, and D.E. Wilson. 2009. *Shifting Sands: Environmental and cultural change in Maryland's Coastal Bays*. IAN Press, University of Maryland Center for Environmental Science.

Basic Theory of Sustainable Development



Sustainable Development Principles:

1. Interdependency (sectors, regions, stakeholders, planning periods)
2. Equilibrium (among social, economy and environment)
3. Justice (among societies and generations)

Sustainable Development driven by Institutional Arrangement – UNDP (1997), Peet (1991), Mc Connell (1981)

It finds that while the role of local institutions is crucial for economic development and as a means of determining the returns of regional development policies, generating an institution-based general regional development strategy is likely to be undermined by the lack of definition of what are adequate, solid, and efficient institutions. Problems related to the measurement of institutions, to their space and time variability, to the difficulties for establishing the right mix of formal and informal institutions, and to the endogeneity between institutions and economic development make one-size-fits-all approaches to operationalizing institutions within regional development possibly unfeasible (Pose, 2009)

GTE and SEA through Spatial Plan

National Spatial Plan

Provincial Spatial Plan

Kabupaten Spatial Plan

Zonation Plan

GTE Allocation
Site Plan

Notes:

- Any power plant allocation is allocated within Local Government/Authority site
- Any power-plant site plan should refer and stated in spatial plan and development plan as well (national and local level)



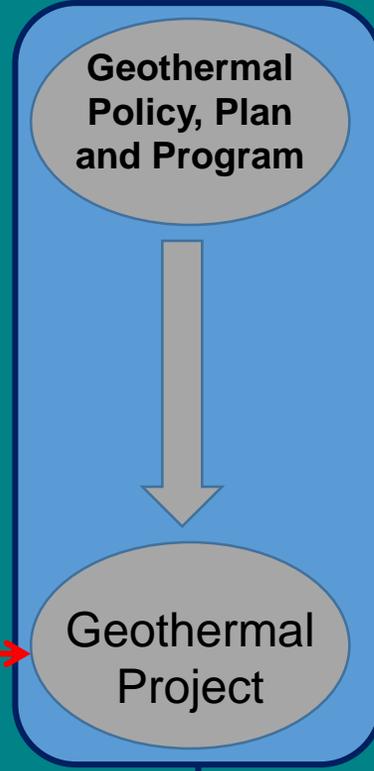
SEA for Synchronizing Spatial Plans towards Geothermal Energy Sector Development Plan; as designed on GEOCAP Project context

*) SEA is KLHS (Kajian Lingkungan Hidup Strategis) in Indonesia Policy Term.

SEA*) is mandatory for ensuring sustainable development principles integrated into Long-term Development Plan, Mid-term Dev. Plan, Spatial Planning (either at national or local level) and High Impacts Project Plan (Law 32/2009, article no. 15)

Laws and regulations: Law on Geothermal (21/2014), Law on Local Authority (32/2014), Law on Spatial Planning (26/2007), Law of Forestry (41/1999), Related Government Regulations, etc.

(WP 2.08; **Geocap**) Laws and Policies Assessment

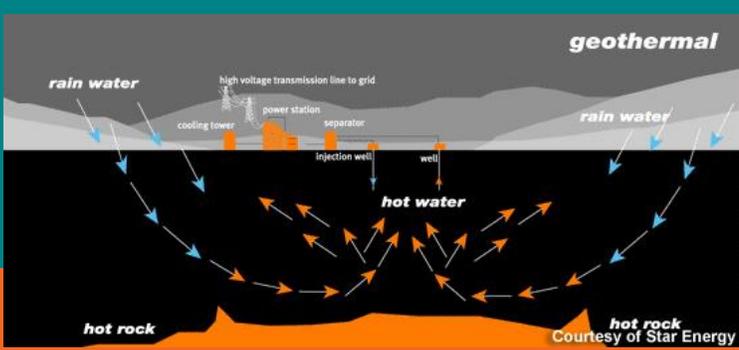


Recommendations



Geothermal Power Plant Wayang Windu as Case Study

Evaluation/ Assessment : SEA & EIA



(WP 1.08; **Geocap**)

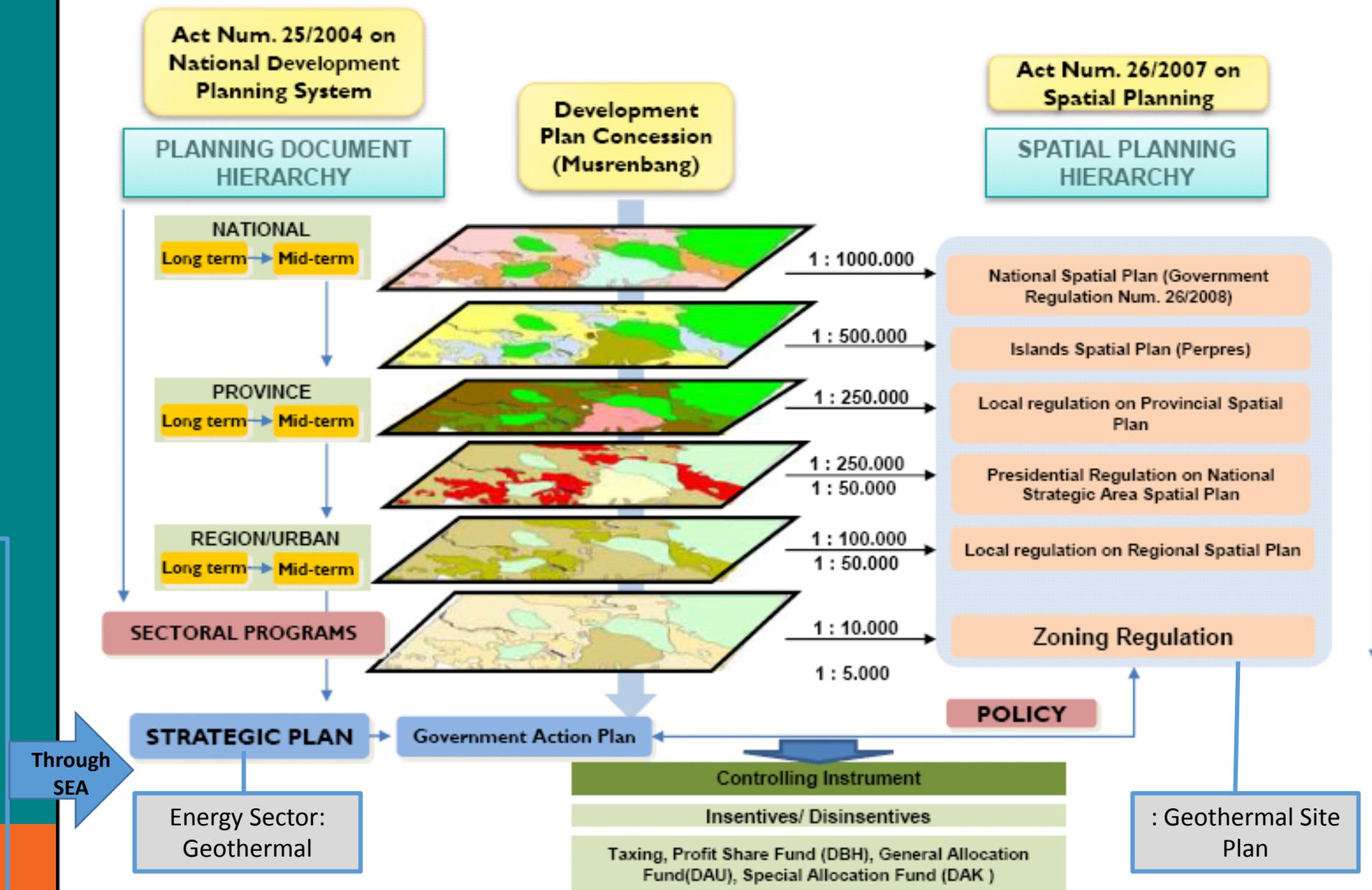


REGIONAL DEVELOPMENT, SPATIAL PLAN AND OTHER DEVELOPMENT PLANS

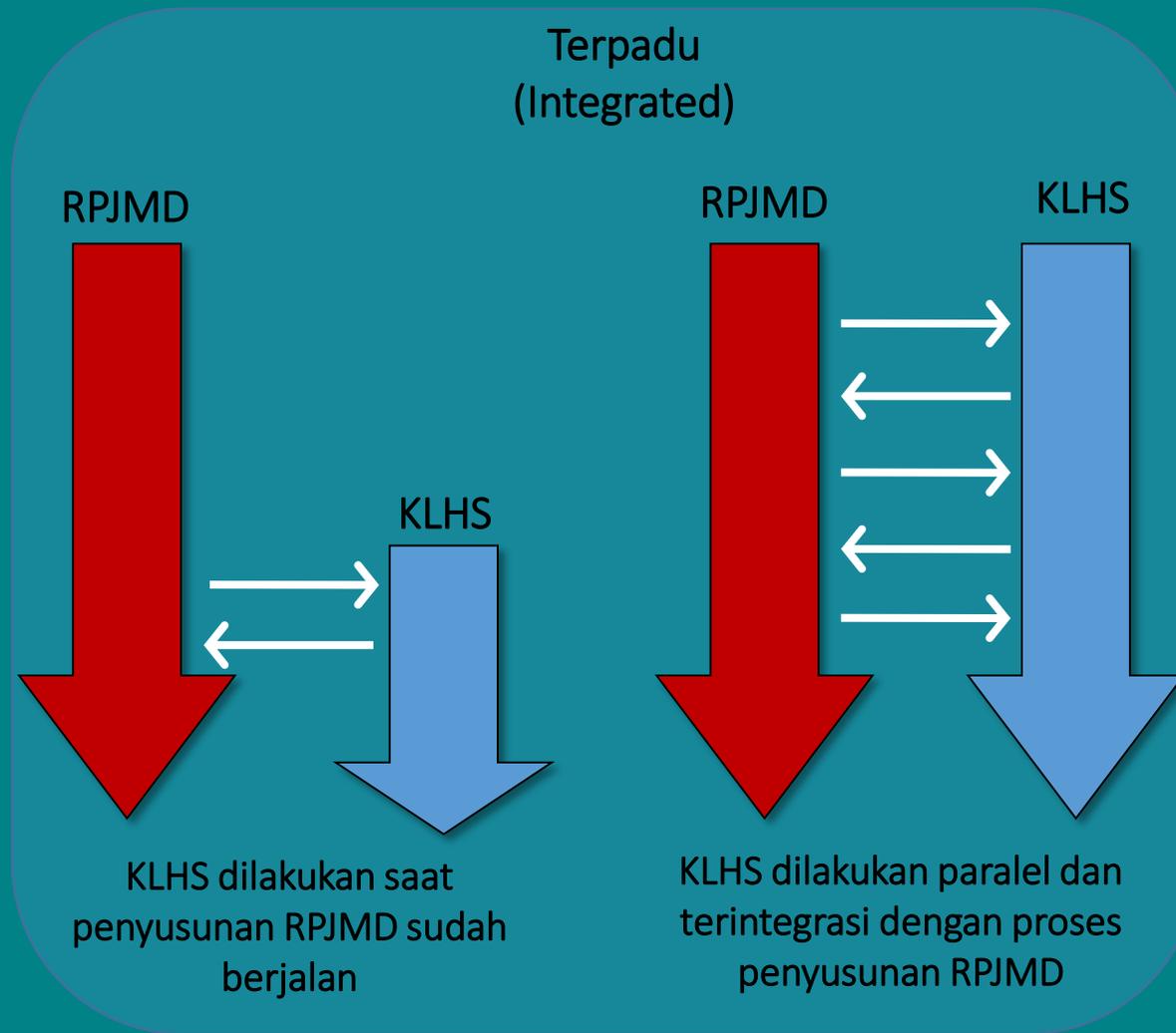
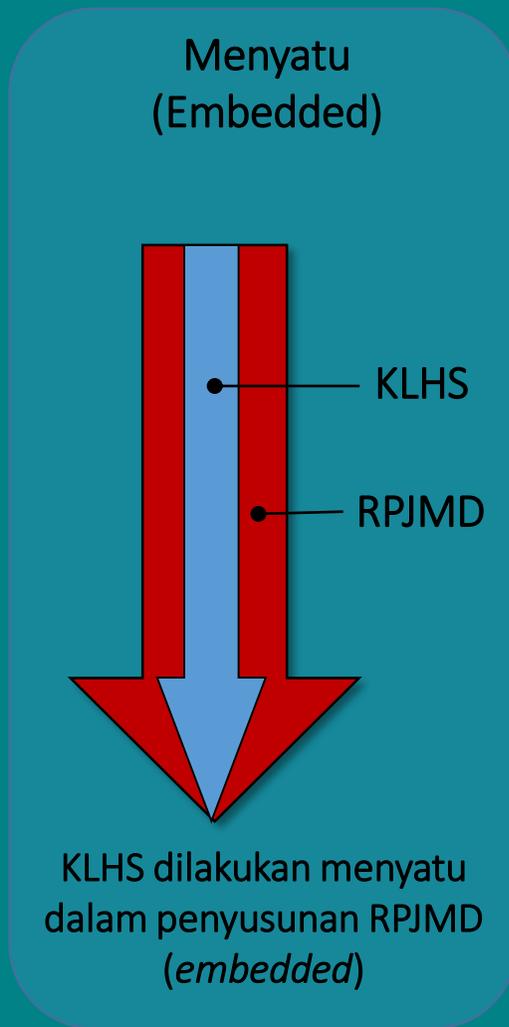
Some issues related to Geothermal power plant location and its multiplier impacts towards local and regional development, as well as environmental system

Policy Questions:

- What strategic impacts may occurs in allocating Geothermal Power Plants in certain location?
- How to synchronized cross development sector lines and inter-regional/local development?



Three alternative ways in conducting SEA



In Indonesia, SEA is using the Integrated Method; mainly due to the capacity in conducting SEA

The logic of Impacts Assessment (SEA)

Un-Sustainable Communities



Sustainable Development

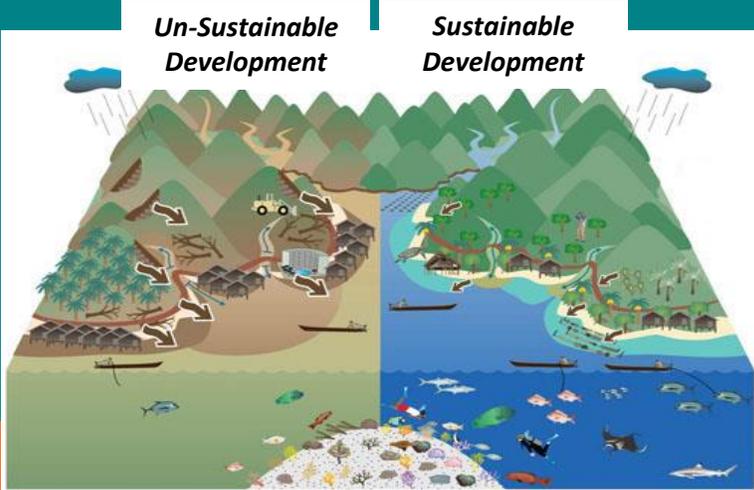
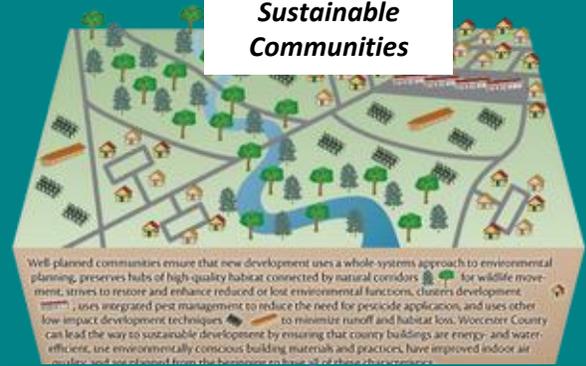
Existing Condition

Defining Main Strategic Issues

Defining Sustainable Strategic Issues

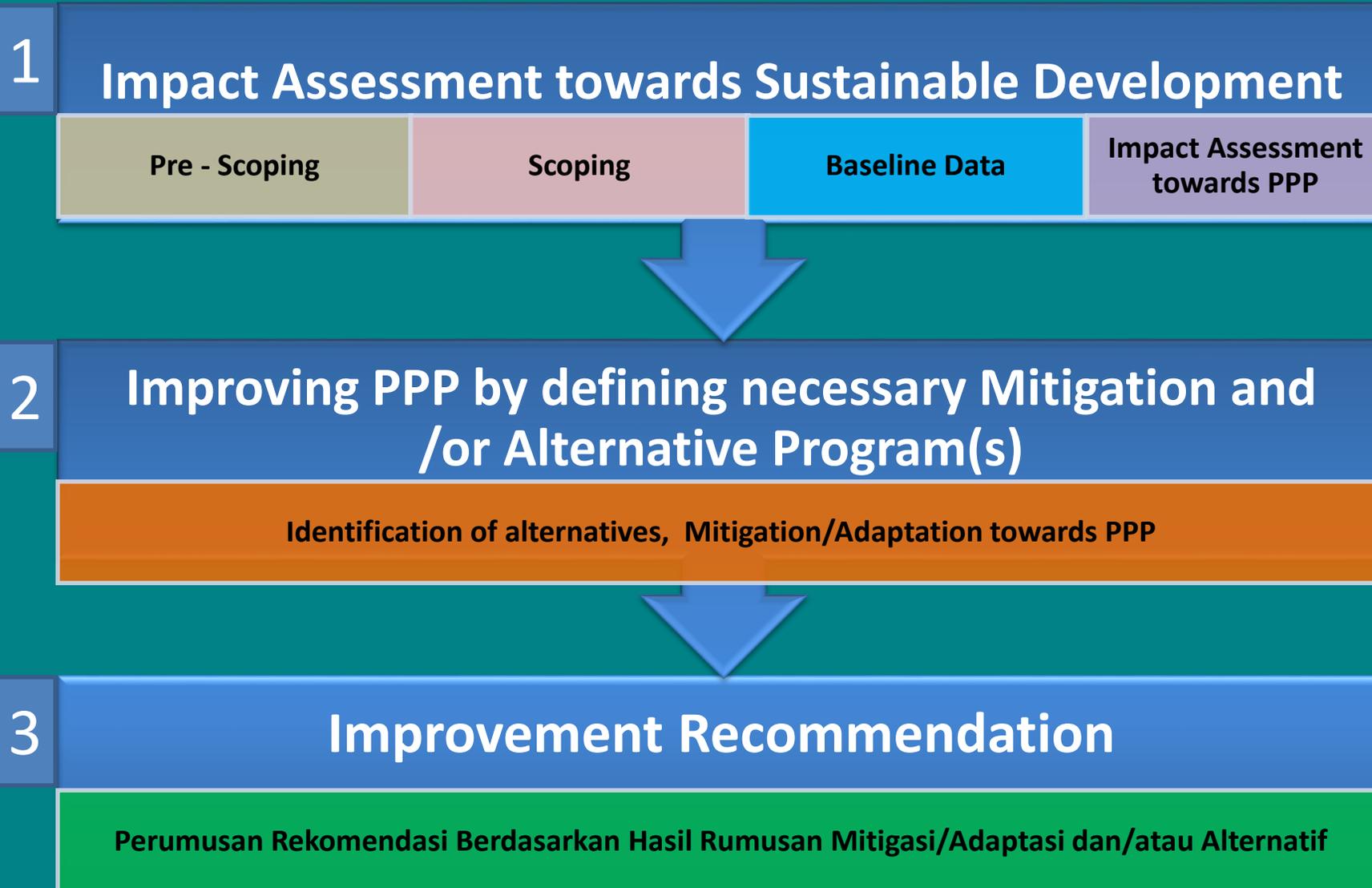
Assessing Sustainable Strategic Issues towards PPP; Identifying any possible sensitive impact towards sustainable development achievement

Sustainable Communities



Defining any possible mitigation/adaptation and/or development alternative needed for ensuring sustainable development achievement

Three Main Steps in Implementing SEA in Indonesia Context and stated in the Law no. 32/2009 *)



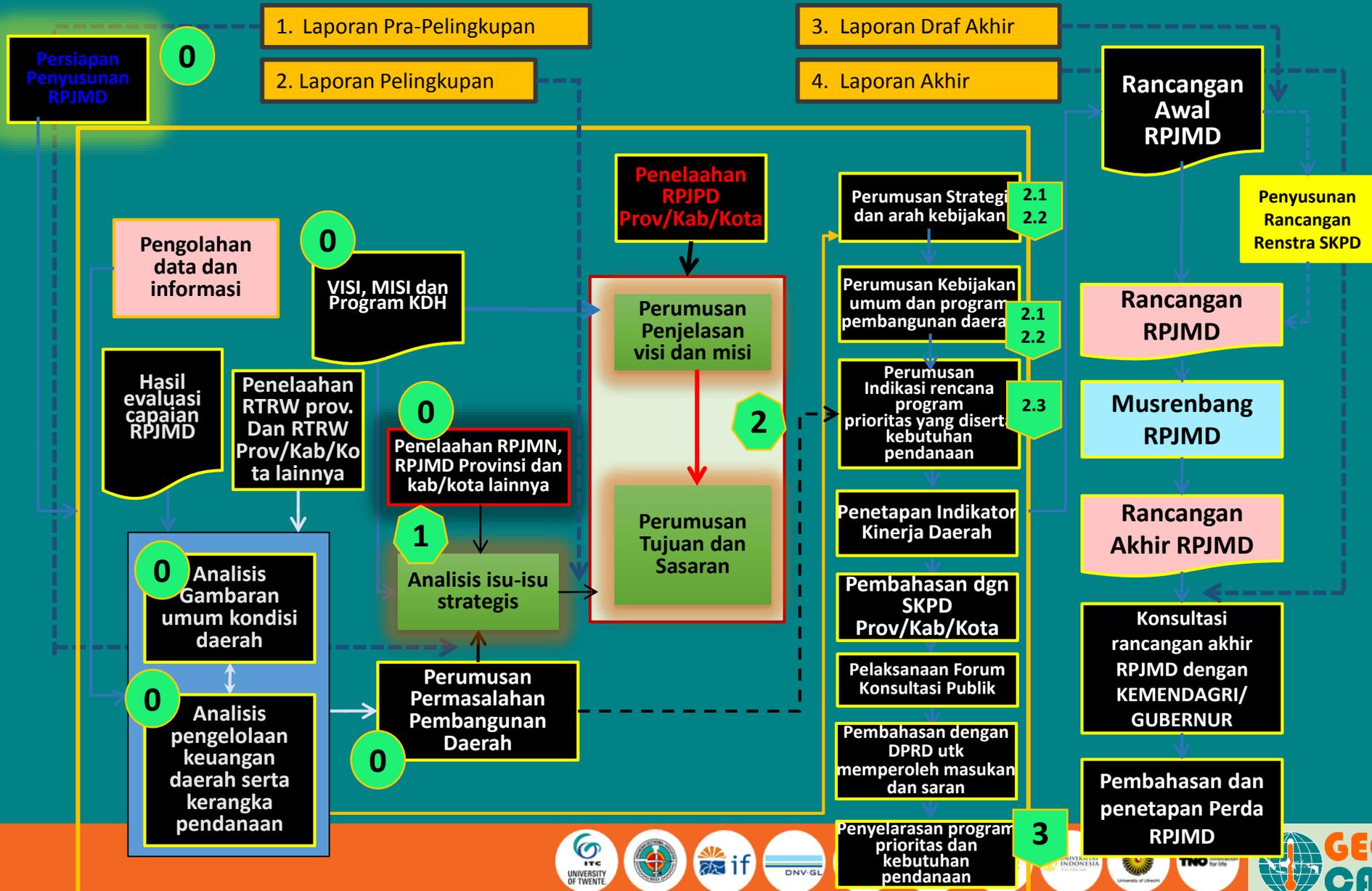
*) Other countries, such as the Netherland may have different methodology approach. In the Netherland, No 2 first then No. 1 where SEA is embed within the development of spatial plan . While in Indonesia, We do it as separate process and need more learning process. (from data to information, knowledge, wisdom and finally making decision)

More Detail Steps in Implementing SEA

UU No. 32/2009	Permendagri No. 67/2014
<p>1 Pengkajian pengaruh kebijakan, rencana, dan/atau program terhadap kondisi lingkungan hidup di suatu wilayah</p>	<ul style="list-style-type: none">❑ Melakukan persiapan dengan: (a) membentuk Pokja Pengendalian Lingkungan (PL); (b) menyusun KAK; merekrut Tenaga Ahli❑ Melakukan pemetaan pemangku kepentingan❑ Melakukan Pra Pelingkupan❑ Melakukan Pelingkupan isu-isu strategis dan Analisis Baseline Data❑ Mengidentifikasi kebijakan, rencana dan/atau program yang memiliki keterkaitan dengan isu-isu strategis❑ Mengkaji pengaruh visi, misi, tujuan dan sasaran, strategi dan arah kebijakan, kebijakan umum dan program pembangunan daerah dan indikasi program prioritas RPJMD
<p>2 Perumusan alternatif penyempurnaan kebijakan, rencana, dan/atau program</p>	<ul style="list-style-type: none">❑ Merumuskan mitigasi atau <i>counter programs</i> untuk meminimalkan potensi dampak negatif yang diperkirakan timbul (intensitas, persebaran, lokasi, lamanya berlangsung dan akumulasi) dan/atau mengusulkan alternatif
<p>3 Rekomendasi perbaikan untuk pengambilan keputusan kebijakan, rencana, dan/atau program yang mengintegrasikan prinsip pembangunan berkelanjutan</p>	<ul style="list-style-type: none">❑ Merekomendasikan mitigasi dan/atau alternatif yang telah disepakati melalui proses pengambilan keputusan❑ Mengintegrasikan hasil pengambilan keputusan ke dalam Rancangan Awal RPJMD❑ Mendokumentasikan seluruh proses dan hasil pelaksanaan KLHS dalam suatu sistematika laporan dan mempublikasikannya kepada pemangku kepentingan



SEA Implementation within the process of making Local Development Plan Policy; an example of SEA is mandatory for any Development Plan and Spatial Plan Policy in Indonesia



0

Preparation

- SEA Team up Membentuk Pokja Pengendalian Lingkungan
- preparing work plan and budget

Pre-Scoping

- Longlisted strategical issues (socially, economically and environmentally)

1

Scoping

- Screening and making short listed strategic issues
- Developing baseline data

2

Impact Assessment

- Sustainable Strategic Issues (sensitives) toward PPP draft
- Defining Mitigation or Alternative for Policies Plan and Program concept betterment

Defining recommendation

Note: SEA team (task force) should ensure that mitigation/adaptation program (s) written as highly recommendation priority.

3

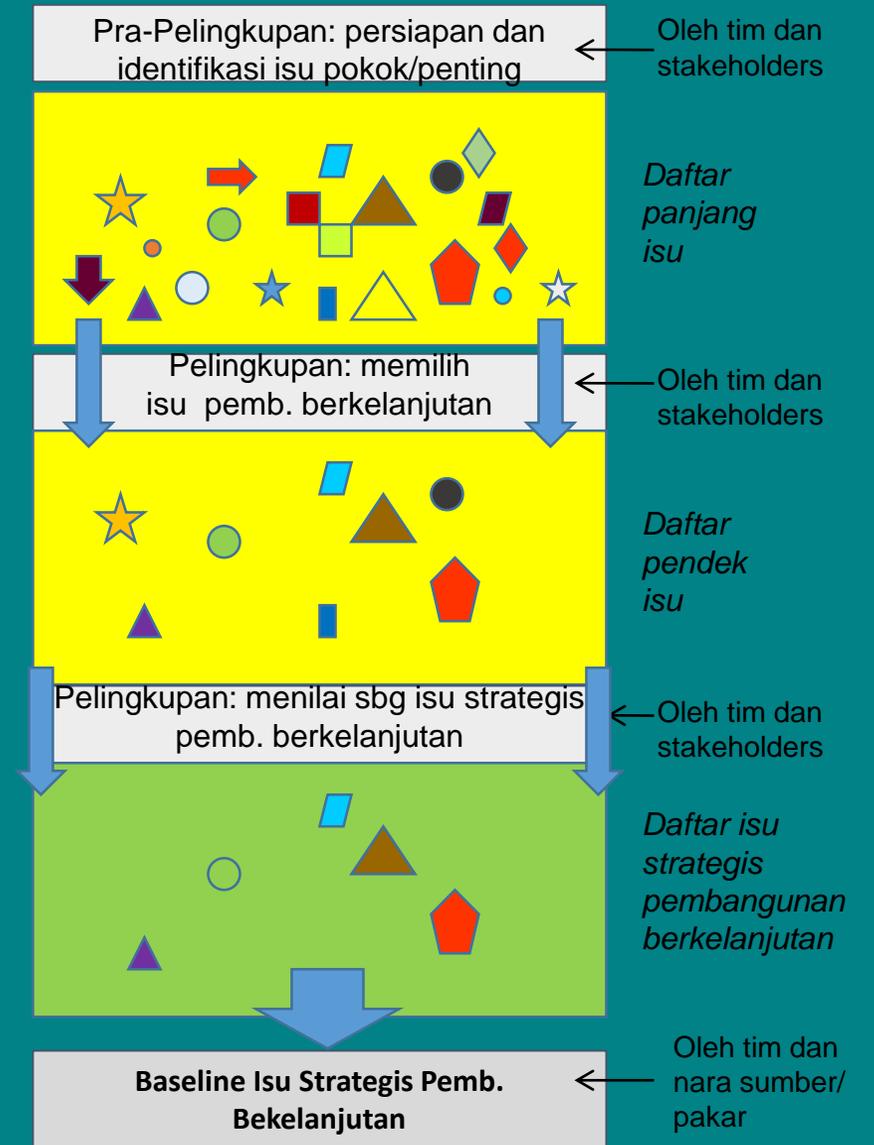
Integrating SEA Recommendation into the assessed PPP (Spatial Plan/ Development Plan) and making decision

Critical point in SEA process; Pre-Scoping and Scoping Phase*)

Sebagai Titik Kritis Tahapan KLHS Berikutnya

- Tetapkan entitas kajian (ruang, waktu dan substansi serta KRP/Kebijakan-Rencana-Program)
- menentukan isu-isu pokok/penting yang ditetapkan pemerintah dan para pemangku kepentingan -> brainstorming → daftar panjang
- memilah isu-isu tersebut bernilai sensitif pemb. berkelanjutan atau tidak → sebagai langkah penapisan → dari “daftar panjang” menjadi “daftar pendek”
- Menilai isu pembangunan yang bernilai strategis dalam daftar pendek (operasional/ praktis/ terbatas/ lokasi-site/jangka pendek/rutin)
- daftar pendek ini yang kemudian dikembangkan sebagai baseline (bukan database) isu strategis pemb. Berkelanjutan di wilayah kajian ybs
- Baseline yang basisnya dari daftar pendek isu strategis tadi menjadi dasar bagi tahap KLHS berikutnya yaitu Kajian Pengaruh

Catatan: isu-isu strategis tsb dinilai dengan prinsip-prinsip pembangunan berkelanjutan agar menjadi (semakin tajam) sebagai “isu strategis pembangunan berkelanjutan”



*) see slide no. 24

*) please check slide no. 19

Strategical issues covering:

1.	Across sector lines
2.	Across planning regions
3.	May creates negative impacts in the long run if there is no mitigation or adaptation or alternative program. <ul style="list-style-type: none">▪ It can disturb development process in certain region▪ It can disturb sustainable development achievement
4.	Accumulative impacts and potentially develop multiple effects

An example of developing scenario, mitigation and alternative

Keinginan/ Kebijakan	Perencanaan Skenario	Program - Proyek	Prioritas	Mitigasi
Meningkatkan akses (arus barang dan manusia) P. Sumatera ke/dari P. Jawa	<p>a. Peningkatan volume sampai > 10 % dalam 5 tahun</p> <p>b. Peningkatan volume arus 5-10% dalam 5 tahun</p>	<p>a. Bangun jembatan (jalan raya dan rel KA)</p> <p>b. Bangun terowongan</p> <p>c. Bangun transportasi air (Feri)</p> <p>d. Kombina</p>	Butir a , segera, dana konsorsium	<p>Tingkat kebijakan dan kelembagaan: Ditetapkan Badan Pengelola Trans Sumatera-Jawa (QA)</p> <p>Tingkat operasional: •Exit strategy (patchway) •Program K3 •QC mode transportasi •Jasa asuransi</p>

Jika tidak ada alternatif program pembangunan

Jika tidak ada alternatif mitigasi

Kaji ulang kelayakan perencanaan skenario dan/atau program-proyek

SEA Performance Criteria (IAIA, 2001)

SEA:

is integrated

- ensures an appropriate environmental assessment of all strategic decisions relevant for the achievement of sustainable development
- addresses the interrelationships of biophysical, social and economic aspects
- is tiered to policies in relevant sectors and, where appropriate, to project EIA and decision making

is sustainability-led

- facilitates identification of development options and alternative proposals that are more sustainable¹

is focused

- provides sufficient, reliable and usable information for development planning and decision making
- concentrates on key issues of sustainable development
- is customised to the characteristics of the decision making process
- is cost and time effective

is accountable

- is the responsibility of the leading agencies for the strategic decision to be taken
- is carried out with professionalism, rigor fairness, impartiality and balance
- is subject to independent checks and verification
- documents and justifies how sustainability issues were taken into account in decision making

is participative

- informs and involves interested and affected publics and government bodies throughout the decision making process
- explicitly addresses their inputs and concerns in documentation and decision making
- has clear, easily understood information requirements and ensures sufficient access to all relevant information

is iterative

- ensures availability of the assessment results early enough to influence the decision making process and inspire future planning
- provides sufficient information on the actual impacts of implementing a strategic decision to judge whether this decision should be amended

Harmonizing SEA and Green Economics Principles

Prinsip Ekonomi Hijau <i>Green Economy; Dalal-Clayton (2012)</i>	Prinsip KLHS <i>(Strategic Env. Assessment); IAIA (2000)</i>
1. The Sustainable Principle. A green, fair and inclusive economy is a means to deliver sustainability	1. Sustainability-oriented: <i>the process should facilitate identification of development options and proposals that are environmentally sustainable</i>
2. The Justice Principle. A green, fair and inclusive economy supports equity	2. Practical: <i>the process should provide information that is required for decision-making</i>
3. The Dignity Principle. A green, fair and inclusive economy creates genuine prosperity and wellbeing for all	3. Integrated: <i>the process should be related to parallel economic and social appraisals and tiered to project EIA where appropriate</i>
4. Healthy Planet Principle. A green, fair and inclusive economy restores lost biodiversity, invests in natural systems and rehabilitates those that are degraded	4. Objective-led: <i>the process should be undertaken with reference to environmental goals and priorities</i>
5. The Inclusion Principle. A green, fair and inclusive economy is inclusive and participatory in decision-making	5. Transparent: <i>the process should have clear, easily understood information requirements including provision for public reporting</i>
6. The Good Governance and Accountability Principle. A green, fair and inclusive economy is accountable	6. Relevant: <i>the process should be focus on issues that matter</i>
7. The Resilience Principle. A green, fair and inclusive economy contributes to economic, social and environmental resilience	7. Cost-effective: <i>the process should achieve its objectives within limits of available information, time and issues</i>
8. The Efficiency and Sufficiency Principle. A green, fair and inclusive economy delivers sustainable consumption and production	8. Fit for purpose: <i>the process should be customised to the characteristics of policy and plan-making</i>
9. The Generations Principle. A green, fair and inclusive economy invests for the present and the future	

Phases in SEA (OECD-DAC, 2006)

1. Establishing the context for SEA
 - Screening
 - Setting objectives
 - Identifying stakeholders
2. Implementing the SEA
 - Scoping (in dialogue with stakeholders)
 - Collecting baseline data
 - Identifying alternatives
 - How to enhance opportunities and mitigate negative impacts
 - Quality assurance
 - Reporting
3. Informing decision making
 - Make recommendations (in dialogue with stakeholders)
4. Monitoring and evaluation

SEA Report

Adapted into
SEA Report
for Spatial
Plan and
Development
Plan
Assessment
local level

Exercise

1. Scoping (and Screening):
 - a. Define Important Strategic Issues (top 5)
 - b. Define strategic objectives (to cope with those issues)
 - c. Define strategic alternatives to reach those objectives
2. Impact Analysis:
 - a. Define geographic boundary of the GTE plan (e.g. Wayang windu)
 - b. Define Baseline: Positioning in terms of Strategic Plan
 - c. Compare alternatives
 - d. Define Mitigation measures
 - e. Defining Risks towards Sustainable Development (might come earlier??)
3. Recommendations

Literatures and data/information:

1. Articles and reports on GTE plant
2. Spatial plan Provincial/District level
3. Related Laws and regulations

